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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,835	02/14/2001	Shozo Nagano	30-5000-(4015) -Div3	2586

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EXAMINER

IP, SIKYIN

ART UNIT

PAPER NUMBER

1742

21

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,835

Applicant(s)

NAGANO ET AL.

Examiner

Sikyin Ip

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 53-55 and 60-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 53-55 and 60-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 53-55, 60, 62, and 64-69 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5590389 to Dunlop et al.

4. The Dunlop disclose(s) the features including the claimed Cu based target material and grain size (col. 3, line 65 to col. 4, line 9 and lines 22-25; and col. 5, line 66 to col. 6, line 2), and second phase/precipitate (col. 2, lines 18-26). The difference between the reference(s) and the claims are as follows: Dunlop does not disclose purity of the Cu element, electromigration resistance, and thermal stability as recited in instant claims 66-68. However, using high purity elemental Cu for sputtering target material is known in art of cited reference. The instant Cu based

sputtering target material is overlapped by the cited reference; consequently, the electromigration resistance and thermal stability properties as recited in the instant claims would have been inherently possessed by the teachings of the cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product.

In re Best, 195 USPQ, 430 and MPEP §2112.01.

“Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.’ In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977).”

5. One of ordinary skill artisan would have been led to select the claimed elements, motivated by a reasonable expectation of successfully achieving cited references’ objectives. The disclosed genus would have rendered the species prima facie obvious. In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990); Merck & Co., Inc. v. Biocraft Laboratories, Inc., 874 F.2d 804, 10 USPQ2d 1843

(Fed. Cir 1989); and *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

6. Claims 61 and 63 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5590389 to Dunlop et al in view of USP 4786469 to Weber et al and JP 49007777.

7. The Dunlop reference(s) disclose(s) the features including the claimed sputtering target with ultra-fine grains. The features relied upon described above can be found in the Dunlop reference(s) at col. 1, lines 21-25 and lines 45-59; and col. 4, lines 10-27. The difference between the reference(s) and the claims are as follows: Dunlop does not explicitly disclose the claimed Cu based alloy containing Tc and Tl elements. However, Weber in the abstract and col. 3, lines 21-34 disclose(s) alloying elements that would refine Cu alloy grain size in the same field of endeavor or the analogous metallurgical art. JP 49007777 in the abstract discloses Tl element is known to improve Cu alloy heat resistance and electrical conductivity. Therefore, combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. It has been held that combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. *In re Castner*, 186 USPQ 213 (217) and *In re Raner*, 134 USPQ 343

(CCPA 1962).

Response to Arguments

8. Applicant's arguments filed February 27, 2003 have been fully considered but they are not persuasive.

9. Applicants' argument as set forth in page 5, second full paragraph of the instant remarks is noted. But, pages 12-13 of the instant specification fail to provide factual evidence to substantiate the claimed ranges are critical. Mere argument or conclusory statements in the specification cannot replace factual evidence. In re Geisler (CA FC) 43 USPQ2d 1362 (7/7/1997). Comparison must be done under identical condition except for the novel features of the invention. In re Brown, 173 USPQ 685 and In re Chapman, 148 USPQ 711. The showing of unexpected results must be occurred over the entire claimed range. In re Clemens, 622 F.2d 1029, 206 USPQ 289, 296 (CCPA 1980). The scope of the showing must be commensurate with the scope of the claims. In re Tiffin, 448 F.2d 791, 792 (Fed. Cir. 1971), In re Coleman, 205 USPQ 1172, In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983), and In re Greenfield, 197 USPQ 227.

10. Applicants argue that grain refining elements of Weber require Ti and/or Zr. But, instant claim 53 has a transitional expression "consisting essentially of" which limits the scope of a claim to the specified ingredients and those that do not materially affect the basic and novel characteristics of a composition. Ex parte Davis,

et al., 80 USPQ 448, 450 (PTO Bd. App. 1948), In re Janakirama-Rao, 317 F. 2d 951, 137 USPQ 893, 894 (CCPA 1963), In re Garnero, 412 F 2d 276, 162 USPQ 221, 223 (CCPA 1969), and In re Herz, et al., 190 USPQ 461, 463 (CCPA 1976).

When applicant contends that modifying components in the reference composition are excluded by the recitation of "consisting essentially of" applicant has the burden of showing the basic and novel characteristic of his/her composition - i.e. a showing that the introduction of these components would materially change the characteristics of applicant's composition. In re De Lajarte, 337 F 2d 870, 143 USPQ 256 (CCPA 1964) and Ex parte Davis, et al., 80 USPQ 448, 450 (PTO Bd. App. 1948).

11. Applicants argue the copper alloy of Sakamoto contains Tl. But, Sakamoto is applied to teach the addition of Tl as in instant claim 63.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone number for this Art Unit 1742 are (703) 305-3601 (Official Paper only) and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft

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documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.



SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
May 19, 2003